

WHAT IS CLAIMED IS:

1. A method for processing an image in a printer capable of printing a two-color image, comprising the steps  
5 of:

setting a primary color and a secondary color as printable colors in the printer;

receiving an original image; and

producing color difference values associated with the  
10 primary color, the secondary color and a white color on an original image pixel-by-pixel basis, and converting a corresponding pixel color of the original image into the primary, secondary or white color associated with a smallest color difference value.

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2. The method as set forth in claim 1, wherein the color converting step comprises the steps of:

on the pixel-by-pixel basis, calculating a first color difference value  $\Delta Col1$  between the corresponding pixel color  
20 of the original image and the primary color according to the equation  $\Delta Col1 = |R_o - R_1| + |G_o - G_1| + |B_o - B_1| - Vcb$ , calculating a second color difference value  $\Delta Col2$  between the corresponding pixel color of the original image and the secondary color according to the equation  $\Delta Col2 = |R_2 - R_o| + |G_2 - G_o| + |B_2 - B_o| - Vcs$ , and  
25 calculating a third color difference value  $\Delta Col3$  between the

corresponding pixel color of the original image and the white color according to the equation  $\Delta Col3 = |255 - R_o| + |255 - G_o| + |255 - B_o|$ , wherein  $R_o$ ,  $G_o$  and  $B_o$  are RGB values of the corresponding pixel color of the original image,  $R_1$ ,  $G_1$  and  $B_1$  are RGB values of the primary color,  $R_2$ ,  $G_2$  and  $B_2$  are RGB values of the secondary color, values of 255 are RGB values of the white color,  $V_{cb}$  is a weight value for the primary color,  $V_{cs}$  is a weight value for the secondary color, and the weight values  $V_{cb}$  and  $V_{cs}$  are arbitrarily set;

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converting the corresponding pixel color into a conversion color associated with the smallest color difference value of the calculated color difference values  $\Delta Col1$ ,  $\Delta Col2$  and  $\Delta Col3$ :

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3. The method as set forth in claim 1, wherein the color converting step comprises the steps of:

setting an arbitrary color to a boundary color;

on the pixel-by-pixel basis, calculating a first color difference value  $\Delta Col1$  between the corresponding pixel color of the original image and the primary color according to the equation  $\Delta Col1 = |R_o - R_1| + |G_o - G_1| + |B_o - B_1| - V_{cb}$ , calculating a second color difference value  $\Delta Col2$  between the corresponding pixel color of the original image and the secondary color according to the equation  $\Delta Col2 = |R_o - R_2| + |G_o - G_2| + |B_o - B_2| - V_{cs}$ , and

20 to the equation  $\Delta Col2 = |R_{th} - R_o| + |G_{th} - G_o| + |B_{th} - B_o| - V_{cs}$ , and

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calculating a third color difference value  $\Delta Col3$  between the corresponding pixel color of the original image and the white color according to the equation  $\Delta Col3 = |255 - R_o| + |255 - G_o| + |255 - B_o|$ , wherein  $R_o$ ,  $G_o$  and  $B_o$  are RGB values of the corresponding pixel color of the original image,  $R_1$ ,  $G_1$  and  $B_1$  are RGB values of the primary color,  $R_{th}$ ,  $G_{th}$  and  $B_{th}$  are RGB values of the boundary color, values of 255 are RGB values of the white color,  $V_{cb}$  is a weight value for the primary color,  $V_{cs}$  is a weight value for the secondary color, and the weight values  $V_{cb}$  and  $V_{cs}$  are arbitrarily set;

comparing the calculated color difference values and producing the smallest color difference color; and

converting the corresponding pixel color into the primary color if the first color difference value  $\Delta Col1$  is smallest, converting the corresponding pixel color into the secondary color if the second color difference value  $\Delta Col2$  is smallest, and converting the corresponding pixel color into the white color if the third color difference value  $\Delta Col3$  is smallest.

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4. The method as set forth in claim 1, further comprising the step of:

converting the received original image into a bitmap image before the color converting step is carried out.

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5. The method as set forth in claim 2 or 3, wherein the color converting step comprises the step of:

deciding a conversion color according to priorities in order of the primary, secondary and white colors if two or  
5 more of the first, second and third color difference values correspond to the smallest color difference value as a result of the comparison.

6. The method as set forth in claim 2 or 3, wherein the  
10 weight value for the primary color is set to be large if a ratio of the primary color is desired to be increased in the two-color image, and wherein the weight value for the secondary color is set to be large if a ratio of the  
secondary color is desired to be increased in the two-color  
15 image.